



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,512	04/02/2001	John S. Perry	1657.48US01	1115

24113 7590 09/03/2002

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.
4800 IDS CENTER
80 SOUTH 8TH STREET
MINNEAPOLIS, MN 55402-2100

EXAMINER

SAADAT, CAMERON

ART UNIT PAPER NUMBER

3713

DATE MAILED: 09/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/824,512

Applicant(s)

PERRY, JOHN S.

Examiner

Cameron Saadat

Art Unit

3713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/29/02
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 9-12,14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Yemini et al. (U.S. Patent No. 5,661,668).

3. Referring to claim 1, Yemini et al. discloses an integrated evaluation simulation system for a weapon system, comprising: a computer system programmed to implement a causal network model comprising an integrated collection of analysis models for creating a virtual representation of a weapon system; at least one virtual simulation system operably coupled to a causal network model to simulate a weapon system; a user interface operably coupled to at least said computer system to selectively input data into said causal network model and receive information from said causal network model and said virtual simulation system (column 1, lines 19-23; see Fig. 1, refs. 1, 5, 9, 16)

4. Referring to claim 2, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein the virtual simulation system comprises an operation simulator to simulate operations of said weapon system; an effectiveness simulator to evaluate the effectiveness of said weapon system in a simulated operational environment (column 1, lines 19-23; column 1, lines 28-33; column 4, lines 9-12).

5. Referring to claim 3, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein the computer system further comprises a control

Art Unit: 3713

system operably coupled to said causal network model to control operation of said causal network model in accordance with one of a plurality of modes of operation (column 11, lines 57-61; column 2, lines 62-63)

6. Referring to claim 4, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein said control system selectively operates said causal network model in a single-run mode, a dependencies mode, a sensitivities mode, or an optimization mode (column 2 line 62 – column 3, line 49; column 12, line 39; column 21, line 54).

7. Referring to claim 5, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein said causal network model performs a sensitivity analysis between an operational performance of said weapon system and an operational performance of one or more selected components or attributes of said weapon system (see claim 1).

8. Referring to claim 6, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein said control system includes an optimization routine that optimizes allocation of one or more selected constrained resources or design of one or more selected components or attributes of said weapon system by utilizing said causal network model (column 12, lines 39-45).

9. Referring to claim 7, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein said optimization routine implements a gradient search methodology to optimize allocation of one or more selected constrained resources or design of one or more selected components or attributes of said weapon system (column 3, lines 4-6; Fig. 3A).

Art Unit: 3713

10. Referring to claim 9, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein said user interface has a menu driven graphical user interface (column 13, lines 22-28).

11. Referring to claim 10, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein said user interface visually displays a diagram of said causal network model having commonality with said causal network model (column 13, lines 20-28).

12. Referring to claim 11, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein said user interface displays data in a modular configuration of three-dimensional plots or numerical values or tables, each plot, value or table being associated with one of a plurality of components or attributes of said weapon system (see Figs. 2A-2G).

13. Referring to claim 12, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein said causal network model communicates with said virtual simulation system via a series of data arrays (see claims 15 and 16).

14. Referring to claim 14, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein said causal network model includes a relational database to store data that define at least one interrelationship between a plurality of parameters of said causal network model or an operational performance and at least one parameter of said causal network model (see claim 19).

15. Referring to claim 15, Yemini et al. discloses an integrated evaluation simulation system for a weapon system wherein said causal network model has a modular

implementation and each module is represented by a separate subroutine (column 6, lines 27-39).

16. Referring to claim 16, Yemini et al. discloses an integrated evaluation and simulation computer for allocating resources across a system architecture of a weapon system to optimize a combat effectiveness of said weapon system, said computer system comprising:

means for inputting data into and receiving information from said computer system;
means for distributing data and information between said computer system and at least one virtual simulation system; means for creating a virtual representation of an optimally effective weapon system based on a causal network model of said weapon system (see claims 15-16, 19, 28).

17. Referring to claim 17, Yemini et al. discloses a method of integrated evaluation and simulation for allocating resources across a system architecture of a weapon system to optimize a combat effectiveness of said weapon system, said method comprising the steps of:

providing a computer system having a user interface and a causal network model;
providing a virtual simulation system; selectively inputting data into said causal network model to create a virtual representation of an optimally effective weapon system;
selectively running said virtual representation of said optimally effective weapon system in said virtual simulation system; enhancing said virtual representation of said optimally effective weapon system (see claims 15-16, 19, 28).

18. Referring to claim 18, Yemini et al. discloses a computer system comprising computer-readable storage media storing at least on computer program that operates as an

Art Unit: 3713

integrated performance simulator for allocating resources across a system architecture of a weapon system to optimize a combat effectiveness of said weapon system, said program comprising the steps of:

storing a causal network model of said weapon system in said computer system; obtaining data necessary for said program to create a virtual representation of an optimally effective weapon system; pulsing said causal network model to create said virtual representation of said optimally effective weapon system; selectively sending said virtual representation to a virtual simulation system for simulating weapon system operations; receiving information about the performance of said weapon system (see claims 15-16, 19, 28).

19. Referring to claim 19, Yemini et al. discloses an integrated evaluation and simulation system for a weapon system, comprising:
a computer system programmed to implement a causal network model comprising an integrated collection of analysis models for creating a virtual representation of a weapon system and to implement a means to communicate with a virtual simulation system; a user interface operably coupled to at least said computer system to selectively input data into said causal network model and receive information from said causal network model and said virtual simulation system (see claims 15-16, 19, 28).

20. Referring to claim 20, Yemini et al. discloses an integrated evaluation and simulation system for a weapon system, comprising:
a computer system programmed to implement a causal network model comprising an integrated collection of analysis models for creating a virtual representation of a weapon system; a user interface operably coupled to said computer system to selectively input

data into and receive information from said causal network model. (see claims 15-16, 19, 28).

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yemini et al. (U.S. Patent No. 5,661,668) in view of Nakajima (U.S. Patent No. 6,411,945). Yemini et al. discloses an integrated evaluation and simulation system for a weapon system comprising an optimization routine (column 12, lines 39-45), but does not specifically allocate optimization routines directed towards cost and weight. However, it is the examiner's position that cost and weight are old and well-known parameters used in optimization routines. Furthermore, Nakajima teaches an optimization routine comprising cost and weight constraints (column 10, lines 29-35). Hence, in view of Nakajima, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the optimization routine described by Yemini et al. to provide cost and weight constraints, thereby minimizing the size and weight of military equipment while maintaining a cost-effective product.

23. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yemini et al. (U.S. Patent No. 5,661,668). Yemini et al. discloses an integrated evaluation and simulation system for a weapon system comprising virtual simulation system 1, but does not specifically teach that the virtual simulation system is an accredited GroundWars

Art Unit: 3713

simulation model. However, it is the examiner's position and that using an accredited GroundWars simulation model is an arbitrary and obvious design choice for simulating a weapon system. Furthermore, it is the applicant's own admission that "other virtual simulation systems may be available presently and in the future" (P. 13). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the virtual simulation system described by Yemini et al. and to use an accredited GroundWars simulation model to simulate a weapon system on an industry-standard simulation model, thereby conforming to military standards and qualification requirements for weapon systems.

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

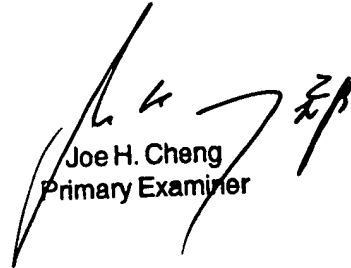
- Sevachko (U.S. Patent No. 5,719,797) – Simulator for Smart Munitions Testing.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cameron Saadat whose telephone number is 703-305-5490. The examiner can normally be reached on M-F 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Valencia Martin-Wallace can be reached on 703-308-4119. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

CS
August 20, 2002


Joe H. Cheng
Primary Examiner